



U.S. Nuclear Waste Technical Review Board

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U.S. Nuclear Waste Technical Review Board: Roles and Priorities

Presented to:
National Transportation Stakeholders' Forum

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The Board's Statutory Mandate

- The 1987 amendments to the Nuclear Waste Policy Act (NWPA) established the U.S. Nuclear Waste Technical Review Board.
- The Board evaluates the technical and scientific validity of DOE activities related to implementing the NWPA, including:
 - transportation, packaging, and storage of spent nuclear fuel (SNF) and high-level radioactive waste (HLW)
 - site characterization, design, and development of facilities for disposing of such wastes
- These activities fall under the Board's technical peer-review mandate *regardless of where in DOE those activities are undertaken*
- The Board is required by law to report its findings, conclusions, and recommendations to Congress and the Secretary of Energy



About the Board

- The 11 Board members are technical and scientific experts who are appointed by the President from a list of nominees submitted by the National Academy of Sciences
- Board members serve on a part-time basis for staggered 4-year terms
- Congress gave the Board access to draft DOE documents to ensure that the Board's recommendations could be made during the decision-making process, not after the fact
- Board documents, including meeting transcripts and materials, reports, correspondence, and congressional testimony can be found at *www.nwtrb.gov*



Board Members

- Rodney Ewing (Chair): Earth and environmental sciences; nuclear engineering and radiological sciences; and materials sciences and engineering (University of Michigan)
- Jean Bahr: Geosciences and geological engineering (University of Wisconsin)
- Steven Becker: Community and environmental health (Old Dominion University)
- Susan Brantley: Geosciences and earth and environmental systems (Pennsylvania State University)
- Sue Clark: Actinide environmental chemistry and radioanalytical chemistry (Washington State University)



Board Members (cont'd)

- Efi Foufoula-Georgiou: Civil engineering and environmental engineering (University of Minnesota)
- Gerald Frankel: Materials science and engineering (Ohio State University)
- Linda Nozick: Civil and environmental engineering (Cornell University)
- Kenneth (Lee) Peddicord: Nuclear engineering (Texas A&M University)
- Paul Turinsky: Nuclear engineering (North Carolina State University)
- Mary Lou Zoback: Geophysics (Stanford University)



Board Activities

- Review activities:
 - Public meetings
 - Site/facility visits
 - Technical meetings
 - Review of DOE reports and programs
 - Attendance at conferences
 - Workshops
 - Interactions with DOE, NRC, EPRI, utilities, Board counterparts in other countries, etc.
- Advisory activities:
 - Reports to Congress and Secretary of Energy
 - Testimony before Congressional Committees
 - Correspondence to DOE following Board meetings
 - Correspondence to Congressional committees and Members



Board Activities (cont'd)

- Board Website:
 - Board reports
 - Papers and presentations by Members and staff
 - Testimony
 - Correspondence
 - Materials from Board meetings, including transcripts, presentations, calendar, etc.



Recent Board Reports

- **Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel.** This Board report examines the technical issues related to extended dry storage of spent nuclear fuel and recommends additional research activities to support storage for extended periods.
- **Nuclear Waste Assessment System for Technical Evaluation (NUWASTE).** This report describes the systems analysis tool that the Board has developed to support its evaluation of DOE activities and presents initial results of analyses completed using the NUWASTE methodology.



Recent Board Reports (cont'd)

- **Technical Advancements and Issues Associated with the Permanent Disposal of High-Activity Wastes.** Based on its 20-year review of the U.S. repository program and its knowledge of disposal programs in other countries, this Board report contains technical insights that will be useful to future U.S. radioactive management and disposal programs.
- **Experience Gained from International and U.S. Nuclear Waste Management Programs.** This Board report discusses histories and experiences of waste-management experiences of 13 countries and draws inferences.



Future Board Reports and Papers

- **Review of DOE's Activities to Preserve Records Created by the Yucca Mountain Project.** This congressionally requested report examines how DOE is archiving and preserving millions of records produced in the course of characterizing Yucca Mountain as a potential site for a deep-mined geologic repository.
- **Survey of DOE-Owned Spent Nuclear Fuel.** This report records the spent nuclear fuel inventories, and the characteristics of the facilities used for storage of spent nuclear fuel at the Hanford (WA), Savannah River (SC), Idaho National Laboratory (ID), West Valley (NY), and Fort St. Vrain (CO) sites.



Future Board Reports and Papers (cont'd)

- **Experience Siting Deep-Mined Geologic Repositories:** This report reviews two dozen efforts in the United States and other countries to identify potentially suitable sites to dispose of high-level radioactive waste and spent nuclear fuel.
- **Deep Borehole Fact Sheet:** This short report summarizes the state of the art with respect to potential use of deep boreholes to dispose of spent nuclear fuel.
- **Update to Survey of National Programs for Managing Spent Nuclear Fuel and High-Level Radioactive Waste:** This report incorporates activities and changes since July 2009 in the programs of 13 nations to manage high-level radioactive waste and spent nuclear fuel and may add information on the programs in additional countries.



Meetings and Workshops

- Meetings:
 - Most recent: April 16, 2013, Richland, WA: Vitrification and disposal of high-level radioactive waste stored on DOE sites
 - Next: November 20, 2013, Washington, DC: TBD
- Workshops:
 - Most recent: June 6-7, 2011, Arlington, VA: Evaluation of waste streams associated with LWR fuel cycle options.
 - Next: November 18-19, 2013, Washington, DC: Implications of container size on the management and disposition of SNF.

